ABSTRACT OF THE DISCLOSURE

A multiple model (MM) radar tracking filter which controls the weighting applied to outputs of first and second model functions responsive to non-Markovian switching logic, includes the first and second model functions, switching logic receiving unweighted outputs from the first and second model functions and generating first and second weighting signals, first and second multipliers generating respective first and second weighted output signals responsive to received ones of the unweighted outputs of the first and second model functions and the first and second weighting signals, and a feed back loop for providing a feedback signal to respective inputs of the first and second model functions responsive to the weighted outputs of the first and second multipliers. If desired, the MM radar tracking filter may also include a summer for generating a signal output responsive to the weighted outputs of the first and second multipliers. A method for controlling the MM radar tracking filter employing alternatives (non-Markov) switching logic is also described.